## IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended)  A computerized method for determining an allocation of software and data components in a distributed system, the method comprising:

modeling a target system, the target system having a plurality of computing resources, the computing resources including at least one of processor resources, memory resources and communications resources;

determining a set of couplings in the target system, said couplings including at least [[on]] one coupling from each of control couplings, data couplings and peripheral couplings;

prepartitioning the set of couplings to produce data and code partitions;

preallocating tasks in each coupling in the set of couplings to one of the plurality of computing resources;

interleaving the prealloeated data and code partitions;

defining a set of components according to the interleaved and prealloeated data and code partitions, each of the components having a data and a code segment;

determining a modularity of the set of components; [[and]]

determining a coupling strength for each coupling in the set of couplings; and

allocating the defined set of components to computer hardware resources having the computing resources according to the modularity and the coupling strength.

2. (Original)  The computerized method of claim 1, further comprising:

determining a computer hardware resource based on the determination of the modularity; and

interleaving the data and the code segment of each of the components.

3. (Original)   The computerized method of claim 1, further comprising:

assigning each component of the set of components to a computer hardware resource based on the determination of the modularity; and

interleaving the data and the code segment of each of the components.

4. (Cancelled)

5. (Previously Presented)    The computerized method of claim 1, wherein the coupling comprises a control coupling and the coupling strength of the control coupling is determined using a task latency for a task in the control coupling, a timing strength, and a frequency strength.

6. (Previously Presented)    The computerized method of claim 1, wherein the coupling comprises a data coupling and the coupling strength of the data coupling is determined using a latency value, a timing strength, a frequency strength, and a bandwidth strength.

7. (Previously Presented)    The computerized method of claim 1, wherein the coupling comprises a peripheral coupling and the coupling strength of the peripheral coupling is determined using a latency value, a timing strength, and a frequency strength.

8. (Previously Presented)    The computerized method of claim 1, further comprising:
        calculating bottleneck ratios; and
        ordering evaluations of couplings based on bottleneck ratios.

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9. (Previously Presented)　　A computer-readable medium having computer executable instructions for performing a method for determining an allocation of software and data components in a distributed system, the method comprising:

　　　　modeling a target system, the target system having a plurality of computing resources, the computing resources including at least one of processor resources, memory resources and communications resources;

　　　　determining a set of couplings in the target system, said couplings including at least one coupling from each of control couplings, data couplings and peripheral couplings;

　　　　prepartitioning the set of couplings to produce data and code partitions;

　　　　preallocating tasks in each coupling in the set of couplings to one of the plurality of computing resources;

　　　　interleaving the ~~preallocated~~ data and code partitions;

　　　　defining a set of components according to the interleaved ~~and preallocated~~ data and ~~control~~ code partitions, each of the components having a data and a code segment;

　　　　determining a modularity of the set of components; [[and]]

　　　　determining a coupling strength for each coupling in the set of couplings; and

　　　　allocating the defined set of components to computer hardware resources having the computing resources having the computing resources according to the modularity and the coupling strength.


10. (Previously Presented)　　The computer-readable medium of claim 9, wherein the method further comprises:

　　　　determining a computer hardware resource based on the determination of the modularity; and

　　　　interleaving the data and the code segment of each of the components.


11. (Previously Presented)　　The computer-readable medium of claim 9, wherein the method further comprises:

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assigning each component of the set of components to a computer hardware resource based on the determination of the modularity; and

interleaving the data and the code segment of each of the components.

12. (Cancelled)

13. (Previously Presented)    The computer-readable medium of claim 9, wherein the coupling comprises a control coupling and the coupling strength of the control coupling is determined using a task latency for a task in the control coupling, a timing strength, and a frequency strength.

14. (Previously Presented)    The computer-readable medium of claim 9, wherein the coupling comprises a data coupling and the coupling strength of the data coupling is determined using a latency value, a timing strength, a frequency strength, and a bandwidth strength.

15. (Previously Presented)    The computer-readable medium of claim 9, wherein the coupling comprises a peripheral coupling and the coupling strength of the peripheral is determined using a latency value, a timing strength, and a frequency strength.

16. (Previously Presented)    The computer-readable medium of claim 9, wherein the method further comprises:

calculating bottleneck ratios; and

ordering evaluations of couplings based on bottleneck ratios.